

(No Model.)

L. W. MOZINGO.
CISTERN WATER FILTER.

No. 547,177.

Patented Oct. 1, 1895.

Fig. 3.

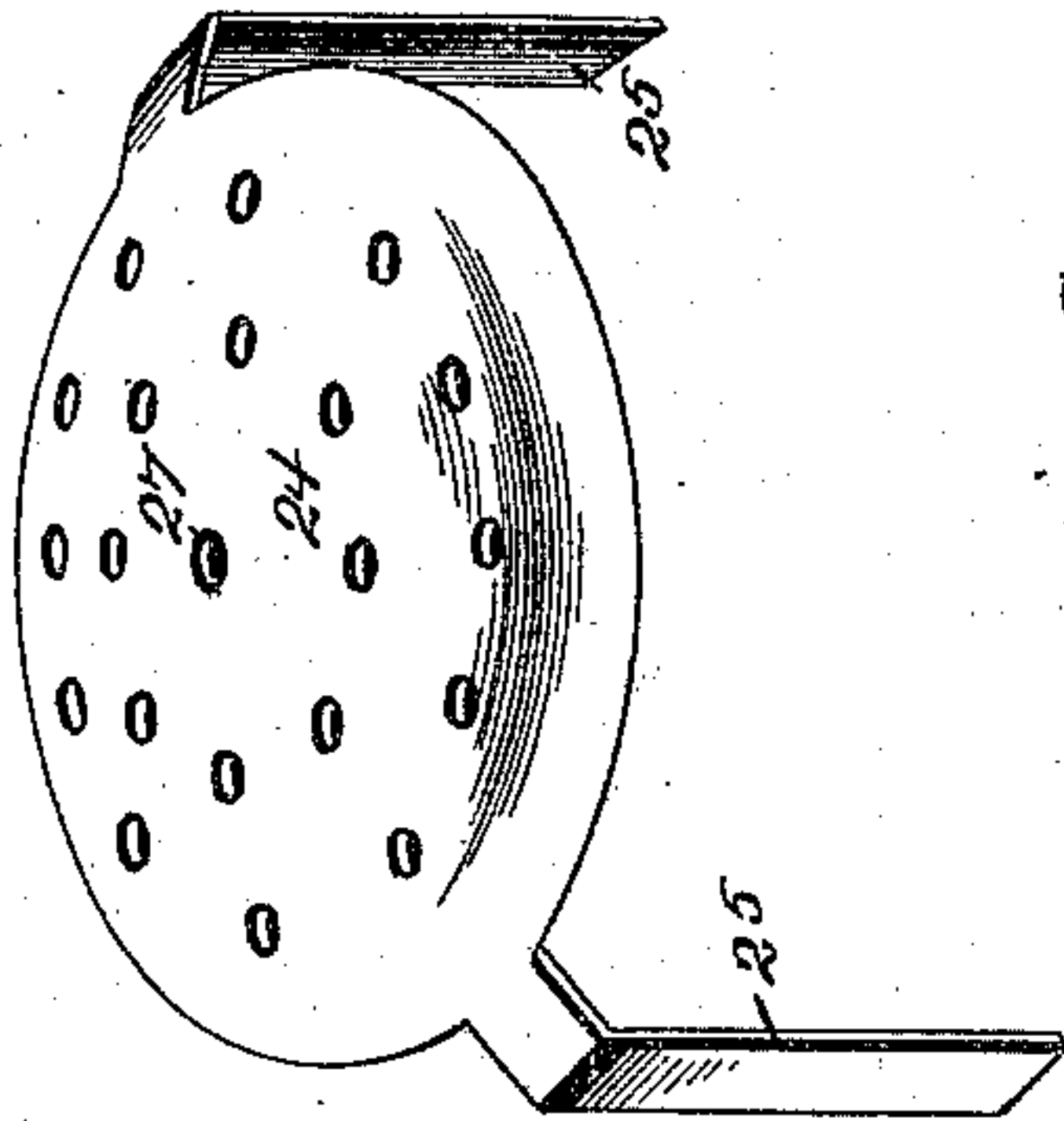


Fig. 4.

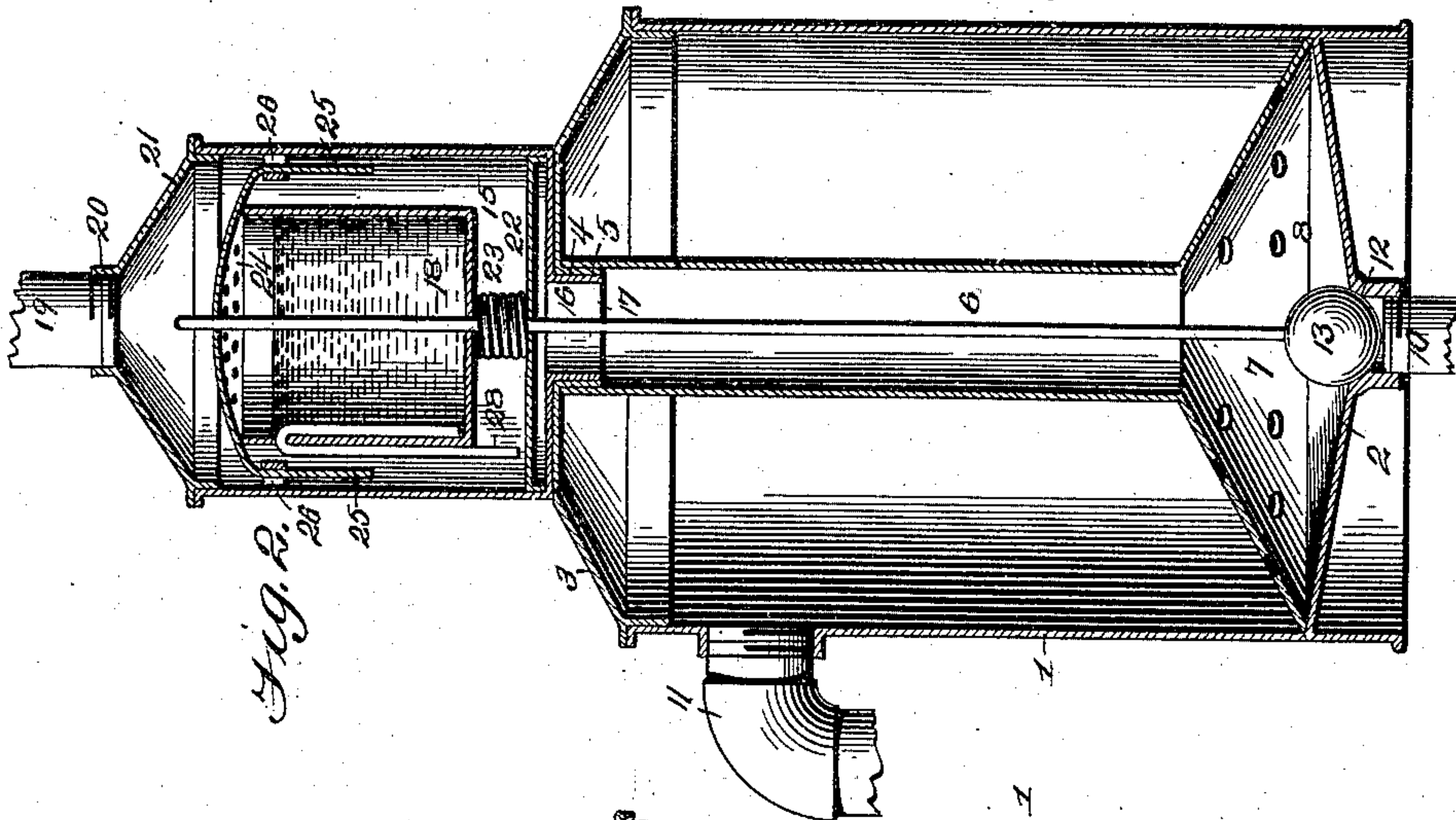
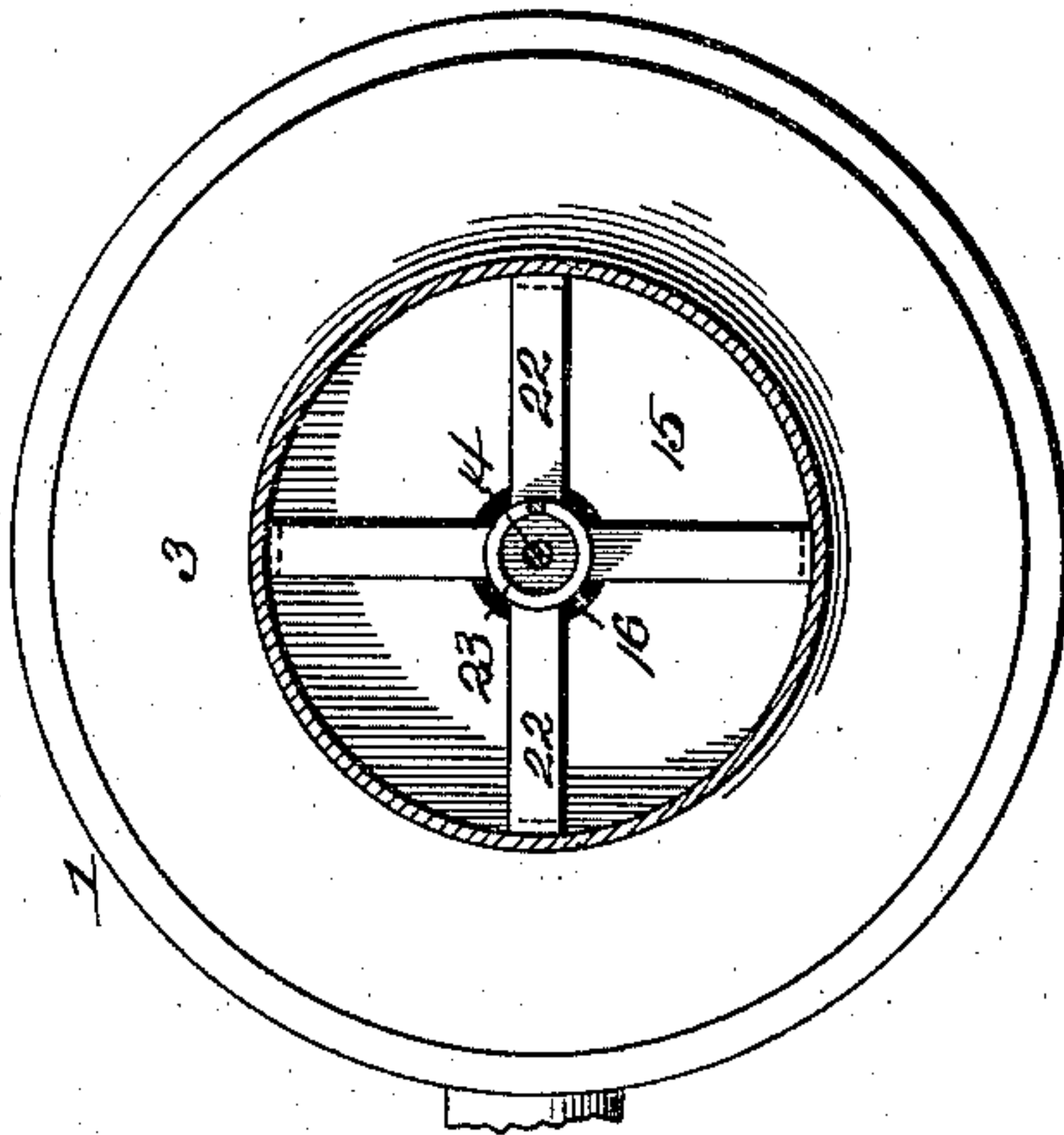


Fig. 2.

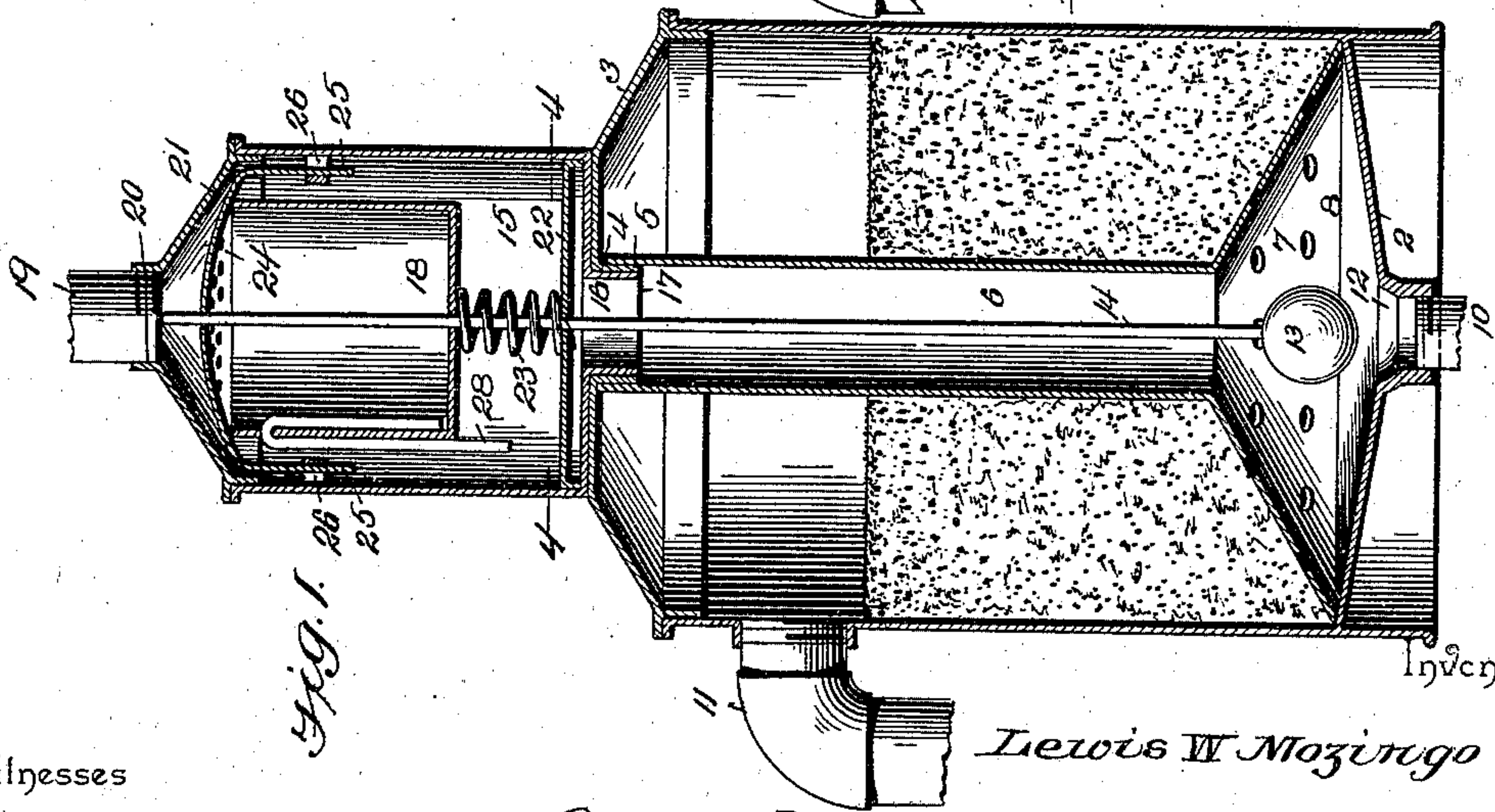


Fig. 1.

Witnesses

Jos. b. Stack
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By his Attorneys.

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UNITED STATES PATENT OFFICE.

LEWIS W. MOZINGO, OF WESTPORT, MISSOURI.

CISTERN-WATER FILTER.

SPECIFICATION forming part of Letters Patent No. 547,177, dated October 1, 1895.

Application filed February 1, 1895. Serial No. 536,989. (No model.)

To all whom it may concern:

Be it known that I, LEWIS W. MOZINGO, a citizen of the United States, residing at Westport, in the county of Jackson and State of Missouri, have invented a new and useful Cistern-Water Filter, of which the following is a specification.

My invention relates to a water-filter particularly adapted for use in connection with cisterns which are supplied by rain, and the objects in view are to provide a simple and efficient construction whereby the filtering and refuse chambers are automatically flushed after the cessation of the supply, to provide improved means for closing the outlet from the waste or refuse chamber during the supply of water to the filter, and, furthermore, to provide means whereby all of the parts of the filter are detachable to give access to the interior thereof to facilitate cleaning.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a vertical central section of a filter constructed in accordance with my invention, the valve which controls the waste pipe or outlet being elevated. Fig. 2 is a similar view showing the waste-pipe controlling-valve closed. Fig. 3 is a view of the perforated shield for protecting the bucket. Fig. 4 is a transverse horizontal section on the line 4 4 of Fig. 1 to show the spider for supporting the lower end of the spring which elevates the bucket when relieved of weight.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the main receptacle of the filter, which may be cylindrical in construction, as shown in the drawings, the same being provided with an inverted conical bottom 2 and a removable top 3, said top being provided at its center with an opening 4, having a depending annular lip 5, which fits within the upper end of a vertical conductor 6, arranged axially in the main receptacle and attached at its lower end to the apex of a conical perforated partition 7. The conical partition 7 and the conductor are preferably removable from the

main receptacle to facilitate cleansing when necessary, and when in place said partition separates the waste-chamber 8 from the filtering-chamber 9, which is preferably provided with a filtering material, such as charcoal, tripoli-stone, gravel, or the like. Communicating with the center of the inverted conical bottom of the waste-chamber is a waste-pipe 10, which is arranged in alignment with the conductor which leads to the waste-chamber, and communicating with the filtering-chamber near its top is an overflow or supply pipe 11. A valve-seat 12 is formed in the bottom of the waste-chamber around the inner end of the waste-pipe, and arranged above said seat, in position to be depressed and brought in contact therewith to close the waste-pipe, is a ball-valve 13. This valve is supported by means of a stem 14, which extends up through the conductor into a receiving-chamber 15, which is preferably cylindrical in construction and is supported upon the cover of the main receptacle, the bottom of said receiving-chamber having an opening 16 and a depending lip 17, which fits within the opening in the cover of the main receptacle, and hence communicates with the axial conductor. Said stem extends through and is attached permanently to the bottom of a vertically-movable bucket 18, which is disposed axially in the receiving-chamber and is adapted to receive water through the inlet-pipe 19, which communicates with an opening 20 in the cover or top 21 of the receiving-chamber. A spider 22 is arranged upon the floor of the receiving-chamber below the bottom of the bucket to form a bearing for the lower end of a coiled spring 23, which is arranged at its upper end in contact with the bottom of said bucket to hold the bucket in its elevated position when empty. In order to prevent leaves and trash from passing into the bucket with the water introduced through the inlet-pipe, I arrange a perforated upwardly-convexed shield 24 in the receiving-chamber over the top of said bucket, said shield being provided with diametrically-opposite depending arms 25, which fit in sockets 26 on the inner surfaces of the sides of the receiving-chamber. The upper end of the valve-stem projects through a guide-opening 27 at the center of the perforated shield to

insure the proper longitudinal movement of the stem and the bucket. Communicating at its inner end with the interior of the bucket near its bottom and having its other end arranged outside of and below the plane of the bottom of the bucket is a siphon 28 to draw the water from the interior of the bucket after the cessation of the supply through the inlet-pipe to relieve said bucket of weight and thus allow it to be elevated by means of its actuating-spring.

This being the construction of the improved filter, the operation thereof is as follows: The valve which controls the waste-pipe is normally held elevated or unseated by means of the actuating-spring of the bucket, whereby free access is given to the interior of the filtering-chamber to ventilate and dry the filtering material contained therein. When water is supplied to the filter by rain or otherwise, it passes first into the bucket and by filling the latter causes it to descend and thereby depress the valve until seated, after which the water passes down through the receiving-chamber, carrying with it leaves and other foreign material, and thence through the conductor to the waste-chamber at the bottom of the main receptacle. From this point the water ascends through the filtering-chamber after passing through the perforations in the conical partition and escapes through the overflow or supply pipe. When the supply of water ceases, the water which is contained in the bucket is drawn off by the siphon, and the bucket, with the attached valve, ascends, thus opening the waste-pipe to allow the leaves and other trash which have accumulated in the waste-chamber to escape. As soon as the valve is seated the water which remains in the filtering chamber flows downwardly to and through the waste-chamber, thus cleansing the filtering material and flushing the waste-chamber to carry out any foreign material which may be contained therein.

In practice various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, I claim—

1. A filter having a filtering chamber provided with an overflow or supply pipe, a sub-jacent waste chamber provided with an inverted conical bottom, and a central waste outlet and separated from the filtering chamber by a perforated partition, a receiving chamber arranged above the filtering chamber, a conductor extending vertically from the bottom of the receiving chamber through the filtering chamber to the waste chamber and arranged in alignment with said waste outlet, a spring-supported bucket arranged

concentrically in the receiving chamber, a valve arranged in the waste chamber in operative relation with a seat contiguous to the waste outlet and having its stem connected to said bucket and extending through the conductor, a stationary upwardly convexed perforated shield removably fixed in the receiving chamber above and greater in diameter than said bucket, said shield being arranged between the bucket and the inlet pipe which communicates with the receiving chamber, whereby its convexed upper surface is exposed to water entering through the inlet pipe and is thereby freed from accumulations of obstructing material and a siphon communicating with the bucket and adapted to withdraw the water therefrom when the supply is checked, substantially as specified.

2. A filter having a main receptacle provided near its top with an overflow or supply pipe, and having an inverted conical bottom provided with a waste outlet and a removable top provided with a central opening, a conical perforated partition arranged near the bottom of the main receptacle to form a sub-jacent waste chamber in communication with the waste outlet and a superjacent filtering chamber adapted for the reception of filtering material, a conductor arranged axially in the filtering chamber and communicating with the space below the perforated partition, a receiving chamber seated upon the cover of the main receptacle and provided with a central opening having a depending lip which extends into the upper end of the conductor, a spider arranged upon the floor of the receiving chamber, a bucket arranged concentrically in the receiving chamber, a valve disposed in operative relation with a valve seat, surrounding the waste outlet and having its stem attached to the bottom of the bucket, an inlet pipe communicating with the top of the chamber, an upwardly convexed perforated shield arranged to cover the bucket and provided with arms fitting in sockets on the sides of the receiving chamber, the upper extremity of the valve stem being fitted in a guide opening in the center of the perforated shield, a spring seated at its lower end on said spider and bearing against the bottom of the bucket, and a siphon communicating with the interior of the bucket to withdraw the contents therefrom after the cessation of the supply, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

LEWIS W. MOZINGO.

Witnesses:

A. C. GREEN,
F. R. SANGER.